Assignment: 8

The director of a university in need of new textbooks wants to assess the effectiveness of four different methods of teaching mathematics to high school students. Each method is applied to a group of students, and their performance is measured by their test scores.

Method A: Traditional Lecture Method
Method B: Discussion-Based Method
Method C: Problem-Solving Method
Method D: Online Learning Method

Each group consists of 50 students. The results are as follows:

- Method A: Mean score of 78, standard deviation of 10
- Method B: Mean score of 82, standard deviation of 8
- Method C: Mean score of 85, standard deviation of 7
- Method D: Mean score of 80, standard deviation of 9

1. Calculate the mean scores for each method.

2. Create a histogram to show the distribution of test scores for each method.

3. Calculate the standard deviation for each method.

4. Create a box plot to show the spread of scores for each method.

5. Predict which method might be the most effective for teaching mathematics based on the test scores.

6. Discuss any potential limitations of using the test scores as the sole criterion for evaluating the effectiveness of the methods.

7. Propose an additional method that could be used to evaluate the effectiveness of the teaching methods.

8. Conclusion: Discuss the results and make recommendations for future improvements.